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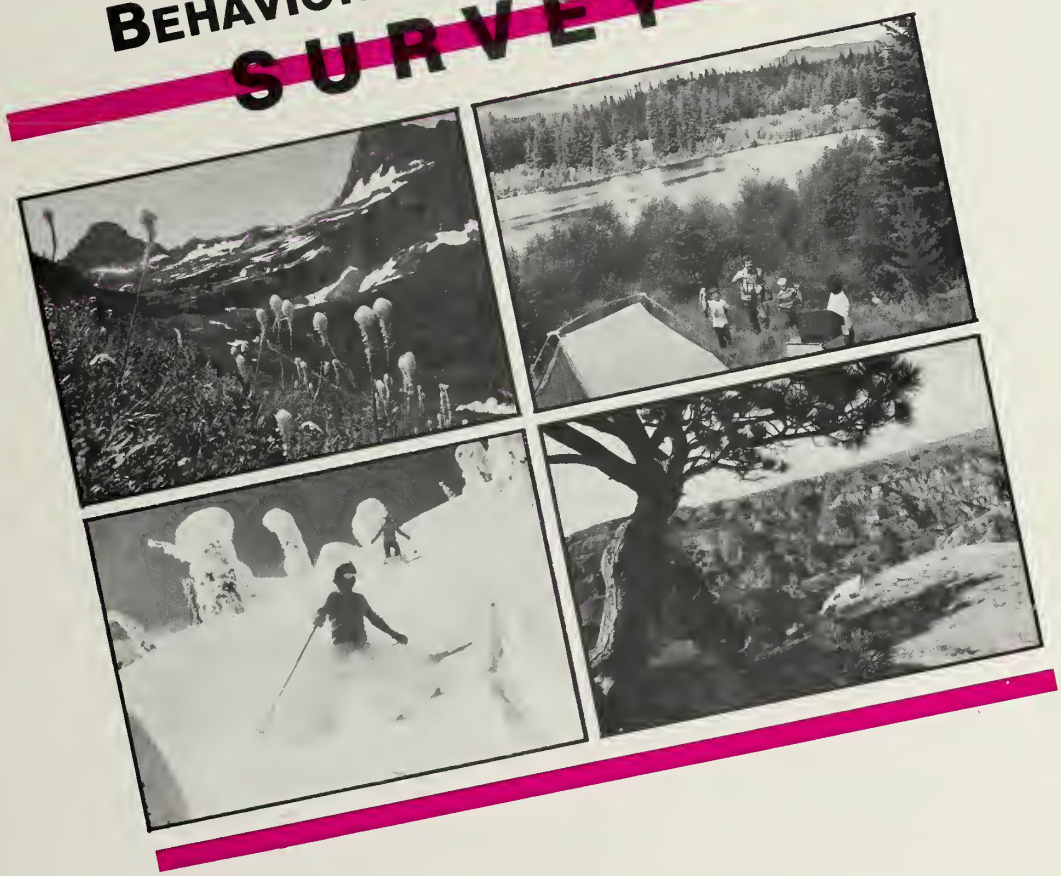
ANNUAL REPORT

MONTANA BEHAVIORAL HEALTH RISK SURVEY



Statewide Analysis of Selected Health Risk Factors

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Behavioral Risk Factor Surveillance System
Chronic Disease Prevention and Health Promotion Program
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From the Director

The Montana Department of Health and Environmental Sciences is pleased to present the results of the 1991 Montana Behavioral Risk Factor Survey. This fourth report follows our 1990, 1984-1988 and 1982 publications documenting the health practices and behaviors of Montana residents that are major contributors to illness, disability, and premature death.

The Behavior Risk Factor Survey is a statewide telephone survey of 1,188 adult residents, aged 18 and older. Montana is one of 40 states funded and supported by the Centers for Disease Control to administer the monthly telephone interviews.

The project represents an on-going surveillance by our department to assess baseline data for identifying and targeting future health problems of Montanans. The information will serve as a valuable guide in the planning of health promotion and disease prevention activities and can assist health professionals in both the public and private sector in identifying populations at risk.

It is our hope that the report will serve as a resource for you and others so we can make a concerted and informed effort to face the health challenges that threaten the health of Montana's citizens.

To Your Health,

Dennis Iverson

Stan Stephens, Governor
State of Montana

Dennis Iverson, Director
Montana Department of Health and Environmental Sciences

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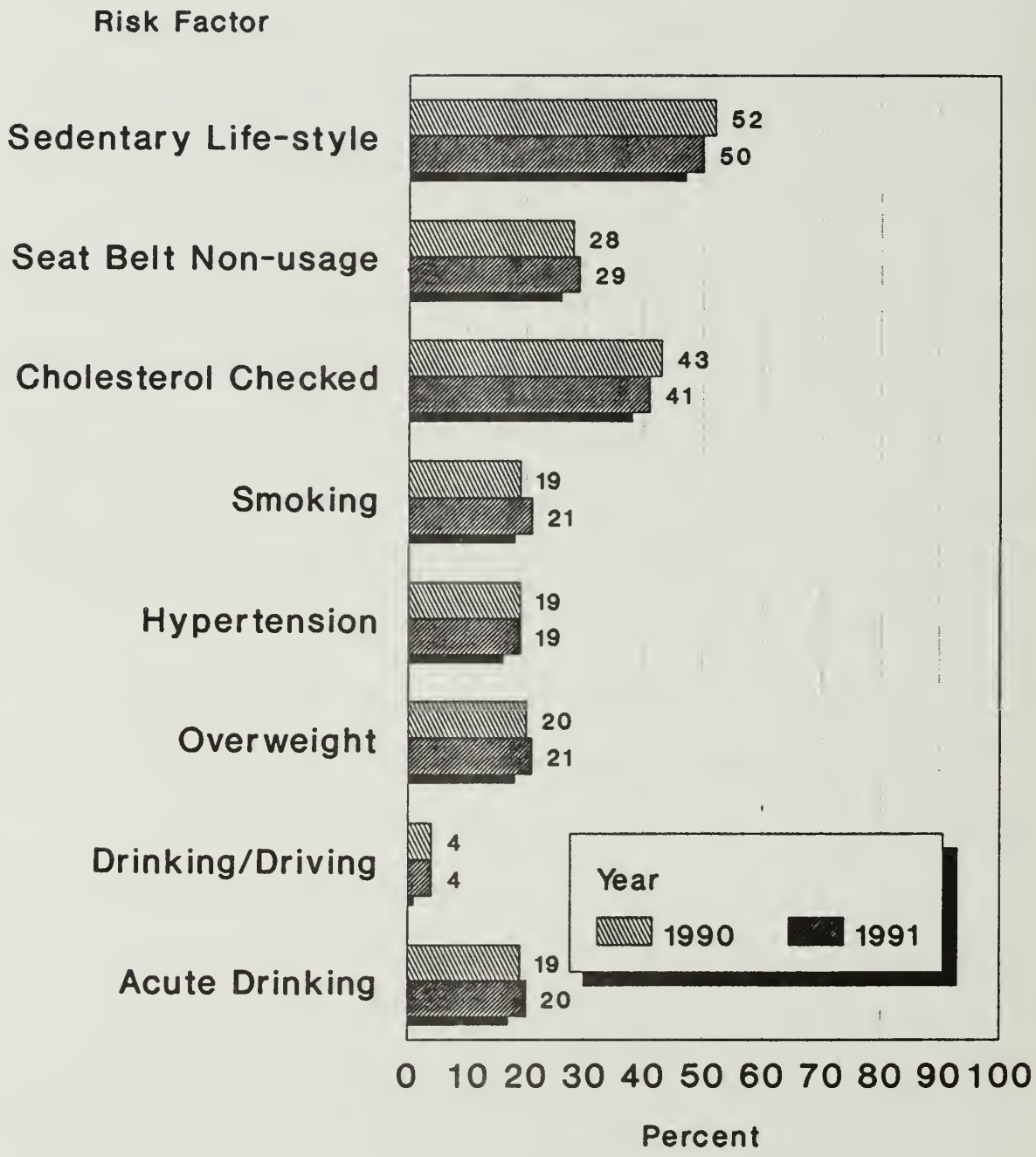
EXECUTIVE SUMMARY

The Montana Department of Health and Environmental Sciences (DHES) entered into a cooperative agreement with the National Centers for Disease Control (CDC) in 1983 to assess behavioral risk factors of adult Montanans. Since the Behavioral Risk Factor Surveillance System (BRFSS) has been in place, a statewide telephone survey has been conducted monthly to monitor the health habits of Montanans. Each year, a total of 1,188 adult Montanans are asked BRFSS health-related questions.

Figure 1 summarizes at-risk behaviors and overall prevalence of the Montana population at risk for preventable disease and premature death during 1991. While most Montanans have adopted healthy life-styles and continue a preference for such behavior, not all individuals are able or willing to take steps that would reduce hazards to good health. The following statements highlight at-risk behaviors identified by the 1991 BRFSS survey:

- Fifty percent of Montanans were at risk for a sedentary life-style.
- Approximately twenty-nine percent "sometimes, seldom, or never" use seat belts when driving or riding in a motor vehicle.
- Forty-one percent of all Montanans have not had their cholesterol checked within the past five years.
- Twenty-one percent smoked cigarettes.
- Nineteen percent were at risk from hypertension.

FIGURE 1
AT-RISK PREVALENCES IN MONTANA
1990 AND 1991



- Twenty-one percent were estimated to be overweight based on body mass index.

- Four percent have driven at least one time during the past month after having had too much to drink.

- Twenty percent were at risk from acute drinking (consuming five or more drinks on one occasion one or more times in the past month).

Between 1990 and 1991, at-risk behaviors remained stable except for the number of respondents reporting having their cholesterol checked, those living a sedentary life-style, and the number indicating they were currently smoking cigarettes. In 1990, 19 percent of the survey respondents indicated that they were regular smokers as compared to 21 percent in 1991. This difference may be due to increased smoking among adult Montanans or it may simply be due to an anomaly in the survey data. Current trends in smoking statistics, both nationally and statewide, indicate that the number of current regular smokers has been declining. Nevertheless, this change should be monitored carefully in the ensuing monthly surveys to determine if there is a trend of increased smoking among Montanans.

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I. INTRODUCTION

Recent scientific studies have found that human health can be significantly improved by adopting life-styles and behaviors which lower the risk of developing illness such as heart disease and cancer and which reduce the risk of accidental injury or death. Persons whose life-styles include moderate exercise, healthy diet, and regular health screenings while excluding smoking and excessive alcohol consumption tend to live longer and have a lower incidence of preventable diseases. Persons with healthy life-styles also often experience heightened feelings of well-being and greater satisfaction with their lives in general.

In 1982, the National Centers for Disease Control (CDC) funded eight states and the District of Columbia to conduct prevalence surveys of major behavioral risk factors[1] among the adult populations of those states. The following year, the Montana Department of Health and Environmental Sciences (DHES) entered into a cooperative agreement with CDC to determine the status of health and behavioral risk factors of adult Montanans through a statewide telephone survey (i.e., Behavioral Risk Factor Surveillance System (BRFSS)). By 1991, the number of states conducting BRFSS had grown to 46 states and the District of Columbia.

BRFSS was developed to collect data on behavioral risk factors considered highly important in contributing to the leading causes of death and disability in the United

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[1]Behaviors that are associated with an increased hazard of developing avoidable illness and/or premature death.

States. The major causes of death by risk factors for Montana during 1990 are presented in Table 1.

TABLE 1

TEN LEADING CAUSES OF DEATH IN MONTANA WITH ASSOCIATED BEHAVIORAL RISK FACTORS - 1990

Cause of Death	Percent of Total Deaths	Associated Risk Factors
Heart Disease	28.5%	Smoking, hypertension, high blood cholesterol, sedentary life-style, overweight
Cancer	23.8%	Smoking, acute drinking
Stroke	7.4%	Hypertension, smoking, high blood cholesterol
Chronic Obstructive Pulmonary Disease	5.8%	Smoking
Accidents	5.8%	Acute drinking, smoking (fires), seat belt non-usage
Pneumonia and Influenza	3.3%	Smoking
Suicide	2.4%	Acute drinking
Diabetes	2.3%	Overweight
Chronic Liver Disease and Cirrhosis	1.3%	Acute drinking
Arteriosclerosis	1.0%	High blood cholesterol
Total Deaths (1990) = 6,835		

Sources: Montana Department of Health and Environmental Sciences, Vital Records and Statistics Bureau, September 1991, Helena, Montana

The 1991 BRFSS survey included questions on seat belt usage, hypertension, exercise, weight control, tobacco use, smokeless tobacco use, alcohol consumption, preventive health practices, health insurance, women's health issues, Acquired Immune Deficiency Syndrome (AIDS), and injury control and child safety. This report focuses on nine primary risk factors (smoking, seat belt non-usage, hypertension, sedentary life-style, chronic alcohol abuse, overweight, high blood cholesterol, lack of mammogram screening, and lack of Pap tests) associated with the 10 leading causes of death. Information on other aspects of the survey is available from Mr. Robert Moon, BRFSS Program Supervisor, Montana Department of Health and Environmental Sciences, Helena, Montana.

Where appropriate, BRFSS Montana data in this report are compared with the national health promotion and disease prevention objectives as presented in "Healthy People 2000 - National Health Promotion and Disease Prevention Objectives" (U.S. Department of Health and Human Services, Public Health Service, September 1990). The Public Health Service document represents a national effort which involved 22 expert working groups, a consortium of almost 300 national organizations and health departments in all states, the Institute of Medicine of the National Academy of Sciences, and public review and comment from more than 10,000 individuals. "Healthy People 2000" challenges communities to translate national objectives into state and local action.

II. BRFSS SURVEY

GOALS AND OBJECTIVES

State health departments have the responsibility to plan, implement, and evaluate disease prevention programs. Many state health department programs stress health risk behavior modification such as seat belt legislation, drinking and driving campaigns, and smoking cessation. To assess the effectiveness of these programs and others in modifying health risk behaviors, the prevalence of risk factors in the population needs to be assessed and monitored. CDC developed BRFSS for use by states as a tool to assess and monitor health risk trends.

The goal of BRFSS is to provide valid data to initiate and guide health promotion and disease prevention programs. To achieve this goal, the following objectives were established by CDC:

- Determine prevalence of personal health behaviors in Montana associated with the 10 leading causes of premature death.
- Increase public awareness that life-styles can significantly influence health and well-being.
- Monitor behavioral risk factors over time and focus on factors that are not improving.
- Assess Montana's progress in meeting the national health objectives for health promotion and disease prevention.
- Assess the impact of state legislation on behavioral risks.

♦ Share BRFSS data with state and local agencies involved with health-related issues.

DHES has accepted the challenge to meet these objectives to reduce the risk of preventable morbidity, mortality, and disability. To accomplish these objectives, it is crucial that the citizens of Montana and health professionals work together to accurately assess the status of health risk behaviors and to implement strategies and interventions to change unhealthy behaviors.

QUESTIONNAIRE DESIGN

CDC and state BRFSS representatives evaluate and revise the BRFSS survey annually; however, issues covered in the survey have remained consistent since the onset of BRFSS. The survey instrument contains three primary sections--the core questionnaire, a set of optional CDC standard questions (modules), and state-specific questions. Inclusion of selected standard CDC modules and state-specific questions began in 1988 and 1983, respectively.

The core questionnaire consists of a standard series of questions asked by interviewers from all BRFSS participating states. Topics in the 1991 core questionnaire included behaviors related to seat belt usage, physical activity, hypertension, body weight, smoking, alcohol consumption, and use of preventive health services. Respondents also were asked to provide demographic information

such as age, gender, race, marital status, household income, employment status, and educational level.

Standard modules are included at the end of the core questionnaire. Since 1988, a variety of topics in the module questionnaires has been made available for use by participating states. In Montana, modules which have been used include questions on AIDS knowledge and awareness, smokeless tobacco, dietary fat, and radon gas.

State-specific questions were developed by the Highway Traffic Safety Division of the Montana Department of Justice and have been included in the survey since 1983. The questions are targeted at determining Montanans' attitudes toward driving under the influence (DUI) and laws pertaining to DUI.

SAMPLING PROCESS

A CDC-modified version of the "Waksberg Random Digit Three Stage Cluster Design" was used to generate a sample size of 1,188 from Montana households with telephones. In the first stage, a list of telephone numbers was randomly generated based on the population distribution within three-digit prefixes in Montana. The second stage involved the "screening" of 33 primary telephone numbers prior to the interviewing session. If the primary numbers were residential, working numbers, they were accepted as primary sampling units (PSU) or clusters. Each PSU consisted of three telephone numbers (the primary telephone number and two numbers with

different last two digits of the suffix), thus resulting in a monthly sample of 99 randomly selected telephone numbers. In the final stage, one adult 18 years of age or older per household was selected to participate in the survey. One respondent per household was randomly selected by means of computer-generated numbers.

INTERVIEW PROCESS

DHES contracted with Dodge Data Systems, Inc. of Helena, Montana, to conduct the interviews using the CDC computer-assisted telephone interviewing (CATI) system. Interviews commenced on or after the second Wednesday of each month and continued until 99 interviews were completed. Interviews were conducted during daytime and evening hours on Monday through Friday, and during daytime hours on weekends to ensure that selected individuals within the sample had the opportunity to participate in the survey. At least five telephone calls were placed at different times of the day and the evening on weekdays and weekends before a sample number was considered a "no answer."

CDC procedures were used to conduct interviews and to replace telephone numbers not resulting in completed interviews. If a selected respondent were not available, an appointment was made to complete the interview at a time acceptable to the respondent. If a selected respondent were not available during the interview period or refused to participate, no other member of that household was interviewed.

Following a refusal, a telephone number within the PSU was randomly generated and the interview process reinitiated with a new telephone number.

When interviews with 99 respondents were completed, a routine of computer programs was used to summarize data. Diskettes were submitted to CDC in Atlanta, where CDC staff then edited, corrected, and compiled state data into a yearly file, made available to participating states.

SURVEY LIMITATIONS

Surveys that require self-reporting have limitations and should be interpreted with caution. Respondents may have the tendency to under-report behaviors that are socially undesirable, unhealthy, or illegal (high alcohol consumption, smoking, drinking and driving, or seat belt non-usage) and over-report behaviors which are socially desirable (amount of exercise, low body weight, or regular health screenings). The accuracy of self-reported information also is affected by the ability of respondents to fully recall past behavior or health screening results.

Telephone surveys exclude households without telephones, which may result in a biased survey population due to under-representation of certain segments of the population. An estimated 97 percent of Montana households have at least one residential telephone (US West; Ed Smith, pers. comm., August 13, 1991). The 3

percent of the homes without telephones may represent a population segment at high risk for preventable diseases associated with low socioeconomic status.

SAMPLE DEMOGRAPHIC CHARACTERISTICS

Table 2 lists the demographics of the BRFS respondents and compares the sample distribution with available 1990 census data. The sample percents illustrated in Table 2 are weighted for sample and population estimate differences in gender and age. As indicated, the sample distribution and the 1990 census are nearly identical except the sample appears to be somewhat weighted in favor of younger persons and male respondents.

The sample distribution of race and 1990 census data are also nearly the same with the non-white population being slightly under-represented. This slight difference is understandable since the 1990 census identified many more native americans than were enumerated in previous census counts.

With respect to marital status, it would appear that the BRFS sample tended to oversample married individuals and undersample those that have never been married or were divorced. The sample indicated that approximately 65 percent of the respondents were married and only 17 percent had never been married while the census data reflects a 60 percent married status with 22 percent reporting that they

TABLE 2

DEMOGRAPHIC CHARACTERISTICS SUMMARY

Demographic Characteristic	1991 BRFSS Data		1990 Census Data	
	Raw Data	Weighted Percent	Number	Percent
Age				
18 to 24 Years	93	13.2%	70,011	12.1%
25 to 34 Years	227	25.3%	123,070	21.3%
35 to 44 Years	284	20.3%	126,756	22.0%
45 to 54 Years	165	12.9%	82,306	14.3%
55 to 64 Years	145	10.7%	68,321	11.8%
65 Years & Over	149	17.5%	106,497	18.5%
Gender (18+ Years Old)				
Male	510	49.3%	281,481	48.8%
Female	678	50.7%	295,480	51.2%
Race (18+ Years Old)				
White	1,123	94.8%	542,595	94.0%
Non-white	65	5.2%	34,366	6.0%
Marital Status				
Married	682	64.6%	365,708	59.8%
Divorced	146	8.2%	56,907	9.3%
Widowed	146	7.0%	44,216	7.2%
Separated	23	1.4%	8,132	1.3%
Never Married	166	16.6%	136,569	22.3%
Unmarried Couple	21	2.1%	N/A	N/A

N/A = Not available.

Source: U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population, STF1A.

had never been married. Most of this difference is due to the fact that the 1990 census data are applicable to all persons in Montana 15 years old and older while the sample data was collected from persons 18 years old and over. Census data (1990) for marital status of those persons 18 years old and over are not available.

III. PRIMARY BEHAVIORAL RISK FACTORS

The following sections describe the results of the 1991 BRFSS survey. Information presented in this chapter reflects results of the survey for Montanans who may be "at risk" due to their health-related life-styles. In addition, data presented in the text and on tables have been "weighted." CDC adjusted the data based on Bureau of the Census estimated 1988 data to compensate for differences between the survey sample and the state population according to age and gender. The survey data tended to have more females and a slightly older representation than the estimated Census distribution, therefore the data were adjusted or "weighted" to account for these differences.

SEDENTARY LIFE-STYLE

Overview

Physical well-being and vitality have been shown to improve with vigorous, regular exercise. Regular exercise also may help prevent or control coronary heart disease, hypertension, non-insulin-dependent diabetes, osteoporosis, obesity, and mental health problems. Since coronary heart disease is the leading cause of death and disability, the role of including physical activity in our daily lives is of particular importance.

Sedentary Life-style in Montana

Respondents were classified as having a sedentary life-style if they reported no physical activity or reported engaging in one or more leisure-time physical activities for less than 20 minutes three or more times per week. Based on this definition, 50 percent of Montanans had a sedentary life-style in 1991 (Table 3). Sedentary life-style tended to be more prevalent among males (54 percent) than females (45 percent).

Fifty-nine percent of Montanans in the less than $10,000 annual income category were at risk from sedentary life-style, while 37 percent who earn $50,000 or more per year were at risk. In addition, sedentary life-style was more prevalent among those with less education and those individuals who were unemployed or retired.

Comparison with 1990 Survey Results

In 1991, 50 percent of Montanans were reported to have a sedentary life-style, two percent lower than in 1990. The incidence of sedentary life-style was higher for males than females in both years. Middle-aged males (45 to 65 years) tended to be more at risk from a sedentary life-style then younger males in both years while older females (55+ years) tended to be more at risk then younger females. With respect to income, a smaller percentage of Montanans with annual household incomes of less than $10,000 were at risk from a sedentary life-style in 1991 than in 1990 (59 percent and 64 percent, respectively).

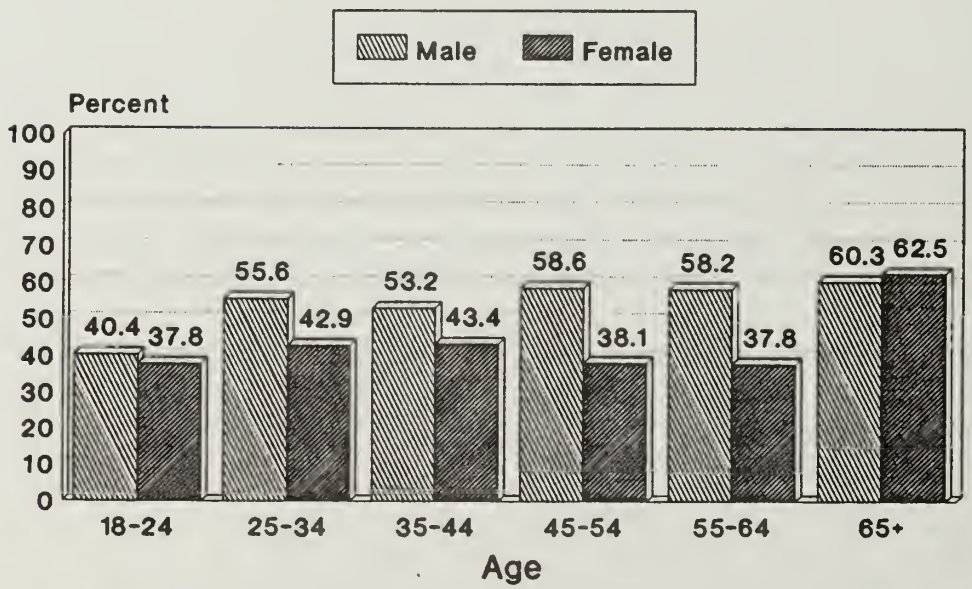
TABLE 3

MONTANANS AT RISK FROM SEDENTARY LIFE- STYLE

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	19	40.4%	19	37.8%	38	39.1%
25 to 34 Years	57	55.6%	51	42.9%	108	49.3%
35 to 44 Years	71	53.2%	67	43.4%	138	48.5%
45 to 54 Years	41	58.6%	39	38.1%	80	48.5%
55 to 64 Years	31	58.2%	37	37.8%	68	47.8%
65+ Years	62	60.3%	102	62.5%	164	60.4%
Total	281	54.2%	316	44.8%	597	49.5%

Note: Percents are based on weighted data.

Survey Analysis
Graphic Presentation



Sedentary Lifestyle

Year 2000 Nationwide Health Objectives

According to the U.S. Department of Health and Human Services, Public Health Service (September 1990), in 1985, 22 percent of Americans 18 years of age and older engaged in leisure-time physical activities for at least 30 minutes, five or more times a week, and 12 percent were physically active seven or more times a week. The risk reduction objective of the Public Health Service is to increase to at least 30 percent the proportion of people 6 years of age and older who engage in regular (preferably every day), light to moderate physical activity for at least 30 minutes a day. Fifty percent of Montanans 18 years of age and older engage in one or more physical activities for less than 20 minutes three or more times per week. BRFSS data are not available for persons under 18 years of age.

SEAT BELT NON-USAGE

Overview

Motor vehicle accidents are the leading cause of deaths among the United States population 35 years old and under. The National Highway Traffic Safety Administration reports that using a lap-shoulder safety belt reduces a person's chance of serious injury or death by an estimated 50 percent and by 35 percent if only a lap belt is used. The U.S. Department of Health and Human Services, Public Health Service (September 1990), reports that "an estimated 4,500 lives were saved in 1988 as a result of the 45-percent seat belt use rate obtained nationwide, and 3,800 of those were in states that have mandatory laws."

Montanans have increased seat belt usage four-fold since the early 1980s, when usage was an estimated 14 percent. On October 1, 1987, a mandatory seat belt law was enacted and penalties for non-usage became effective on January 1, 1988. Enactment of the law increased Montana's seat belt usage to 56 percent by early 1988. Currently, seat belt usage among Montanans is estimated at between 61 and 64 percent (Montana Department of Justice, Highway Traffic Safety Division, no date).

Seat Belt Non-usage in Montana

In 1991, 28.5 percent of Montanans "sometimes, seldom, or never" used seat belts when driving or riding in a motor vehicle (Table 4). Non-usage of seat belts was more often reported by males (36 percent) than females (21 percent). Younger Montanans and those with an annual household income of less than $10,000 represented the largest group at risk from seat belt non-usage.

Comparison with 1990 Survey Results

Lack of seat belt usage did not change between 1990 and 1991; in 1990, 28.3 percent of Montanans reported sometimes, seldom, or never using a seat belt when driving or riding in a motor vehicle compared with 28.5 percent in 1990. Observation data obtained by the Montana Department of Justice, Highway Traffic Safety Division, on seat belt usage is consistent with BRFSS data, which tends to validate the self-reported BRFSS data.

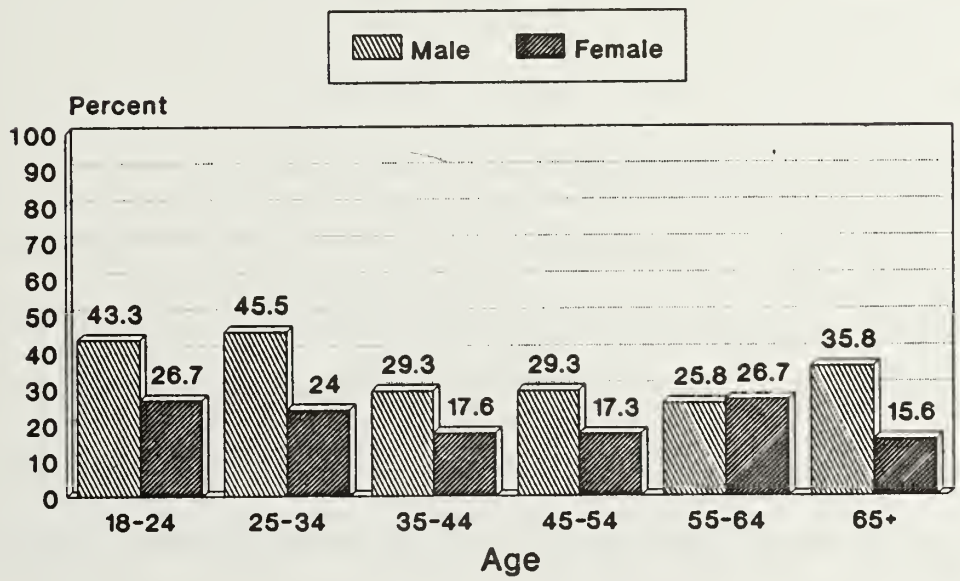
TABLE 4

MONTANANS AT RISK FROM SEAT BELT NON- USAGE

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	19	43.3%	12	26.7%	31	34.9%
25 to 34 Years	45	45.5%	31	24.0%	76	35.0%
35 to 44 Years	40	29.3%	28	17.6%	68	23.7%
45 to 54 Years	21	29.3%	15	17.3%	36	23.4%
55 to 64 Years	13	25.8%	24	26.7%	37	26.3%
65+ Years	39	35.8%	29	15.6%	68	24.4%
Total	177	36.0%	140	21.1%	317	28.5%

Note: Percents are based on weighted data.

Survey Analysis
Graphic Presentation



Seat Belt Non-usage

Year 2000 Nationwide Health Objectives

Thirty-three states and the District of Columbia had mandatory seat belt laws by 1989. The U.S. Public Health Service's objective by year 2000 is to implement a mandatory seat belt law in all states. Montana has already met this objective through enactment of a mandatory seat belt law in 1987.

HIGH BLOOD CHOLESTEROL

Overview

Coronary heart disease causes an estimated one-half million deaths in the United States each year (U.S. Department of Health and Human Services, October 1988). In Montana, heart disease accounted for 1,947 deaths (243.7 per 100,000 population) in 1990. Lowering blood cholesterol has been demonstrated to be an effective means of reducing the risk of coronary heart disease. Although high blood cholesterol can be hereditary, dietary treatment or drug therapy may help reduce blood cholesterol levels for some people.

High Blood Cholesterol in Montana

Blood serum cholesterol levels are divided into 3 categories--desirable (less than 200 mg/dl), borderline high (200 to 239 mg/dl), and high (240 mg/dl and over). In the BRFSS survey, at risk from high blood cholesterol refers to respondents who had not had their blood cholesterol checked or did not know if they had it checked within the past five years. In 1991, approximately 41 percent of Montanans were at risk from

from not having their blood cholesterol checked (Table 5). Males, persons under 45 years of age, those with lower household incomes, and less educated individuals appear to be more at risk from this behavior then their counterparts. Of those Montanans who had their blood cholesterol checked in 1991, 27 percent were told that their levels were high.

Comparison with 1990 Survey Results

In 1990, 43 percent of Montanans had not had their blood cholesterol checked within the past 5 years. Similar to 1991 data, males and younger Montanans were more at risk for not having their blood cholesterol checked than females or older persons.

Year 2000 Nationwide Health Objectives

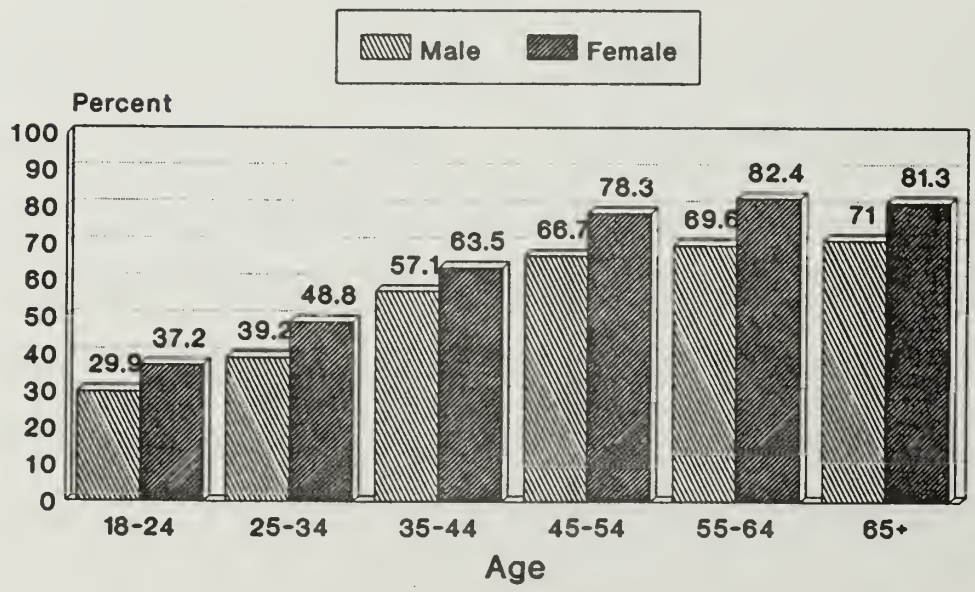
Since high blood cholesterol is associated with a higher incidence of coronary heart disease, reducing the prevalence of high blood cholesterol among the adult population is expected to decrease the risk for coronary heart disease. The year 2000 objective of the U.S. Department of Health and Human Services (September 1990) is to increase to at least 75 percent the proportion of adults who have had their blood cholesterol checked within the preceding 5 years. In Montana, during 1991, the proportion of adult persons that had their blood cholesterol checked was 16 percent less that the national goal for the year 2000. Males and younger Montanans need to be made aware of the risks related to high blood cholesterol levels in order to increase the state proportion to the national goal by the year 2000.

MONTANANS WHO HAVE HAD THEIR BLOOD CHOLESTEROL CHECKED DURING PAST 5 YEARS

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	13	29.9%	17	37.2%	30	33.6%
25 to 34 Years	40	39.2%	61	48.8%	101	43.9%
35 to 44 Years	77	57.1%	93	63.5%	170	60.2%
45 to 54 Years	47	66.7%	71	78.3%	118	72.4%
55 to 64 Years	38	69.6%	77	82.4%	115	76.1%
65+ Years	69	71.0%	136	81.3%	205	76.8%
Total	284	53.5%	455	63.5%	739	58.6%

Note: Percents are based on weighted data.

Survey Analysis Graphic Presentation



Blood Cholesterol Level

CIGARETTE SMOKING

Overview

Cigarette smoking is the single most preventable cause of death and disability from cancer and other diseases. The national average death rate is about twice as high for heavy smokers between the ages of 25 and 65 than it is for non-smokers. Although an estimated 38 million Americans have stopped smoking and almost one-half of all adults who ever smoked have stopped, approximately 50 million Americans continue to smoke (U.S. Department of Health and Human Services, Public Health Service, October 5, 1990).

Each day at least 3,000 American teenagers start smoking. An adolescent health survey conducted in Montana during the 1990-91 school year showed that 48 percent of all females and 56 percent of all males in grades 7 through 12 reported that they had already tried cigarette smoking or they thought they would try smoking within the next year. In addition, 22 percent of all students in these grades reported that they smoked regularly (Montana Office of Public Instruction, July 1991).

Cigarette Smoking in Montana

A current smoker is defined as a person who has smoked at least 100 cigarettes in his or her lifetime and who currently smokes. In 1991, an estimated 21 percent of Montanans were current smokers, with the percentage being nearly equal for females

and males (Table 6). Lower income (less than $20,000 annually) Montanans were more often at risk from smoking than those in higher income categories.

Comparison with 1990 Survey Results

There was a slight increase in the percentage of Montanans at risk from smoking between 1990 and 1991. While the increase is not statistically significant it does reverse a trend that has been occurring since the BRFSS was initiated in 1984. The percentage of females that smoke was slightly higher than males in 1990.

Year 2000 Nationwide Health Objectives

The year 2000 risk reduction objective of the U.S. Department of Health and Human Services is to reduce the prevalence of cigarette smoking among people aged 20 and older to 15 percent or less. In 1991, prevalence of cigarette smoking among Montanans aged 18 years and older was 6 percent higher than the year 2000 objective.

HYPERTENSION

Overview

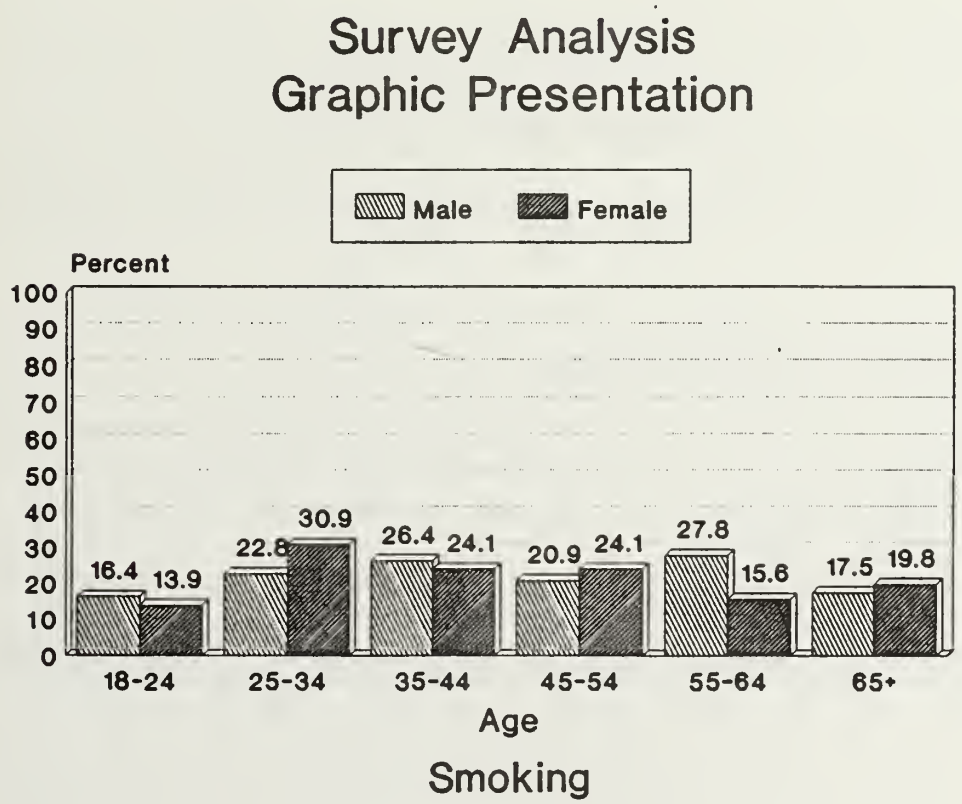
Elevated blood pressure can lead to cardiovascular diseases such as coronary heart disease, hypertensive heart disease, and stroke. People with high blood pressure have a risk three to four times higher of developing coronary heart disease and as much as seven times higher of suffering a stroke than people with normal blood

TABLE 6

MONTANANS AT RISK FROM CIGARETTE SMOKING

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	8	16.4%	9	13.9%	17	15.1%
25 to 34 Years	23	22.8%	37	30.9%	60	26.7%
35 to 44 Years	35	26.4%	36	24.1%	71	25.3%
45 to 54 Years	15	20.9%	26	24.1%	41	22.5%
55 to 64 Years	13	27.8%	15	15.6%	28	21.6%
65+ Years	8	17.5%	19	19.8%	27	18.7%
Total	102	20.9%	143	21.0%	245	21.0%

Note: Percents are based on weighted data and totals include 1 refusal.



pressure (U.S. Department of Health and Human Services, Public Health Service, September 1990).

Hypertension in Montana

High blood pressure is defined as being equal to or greater than 140 mm Hg systolic and/or 90 mm Hg diastolic. In this survey, at risk from hypertension refers to respondents who reported they were ever told that their blood pressure was high. It should be noted that the data include only those who were aware they have high blood pressure. The survey results exclude an undetermined at-risk population who have hypertension, but are unaware of it. Therefore, the real prevalence of hypertension among Montanans may be higher than the data in this report indicates.

Approximately 19 percent of Montanans 18 years old and older were at risk from hypertension during 1991 (22 percent female and 15 percent male). As shown in Table 7, the age group most at risk from hypertension was 55 years and older.

Comparison with 1990 Survey Results

The proportion of Montanans at risk from high blood pressure in 1991 was nearly identical to the 1990 results (18.5 percent in 1991 and 18.6 percent in 1990). However, the difference between the number of males at risk and the number of females at risk increased significantly. In 1990, 15 percent of adult males and 22

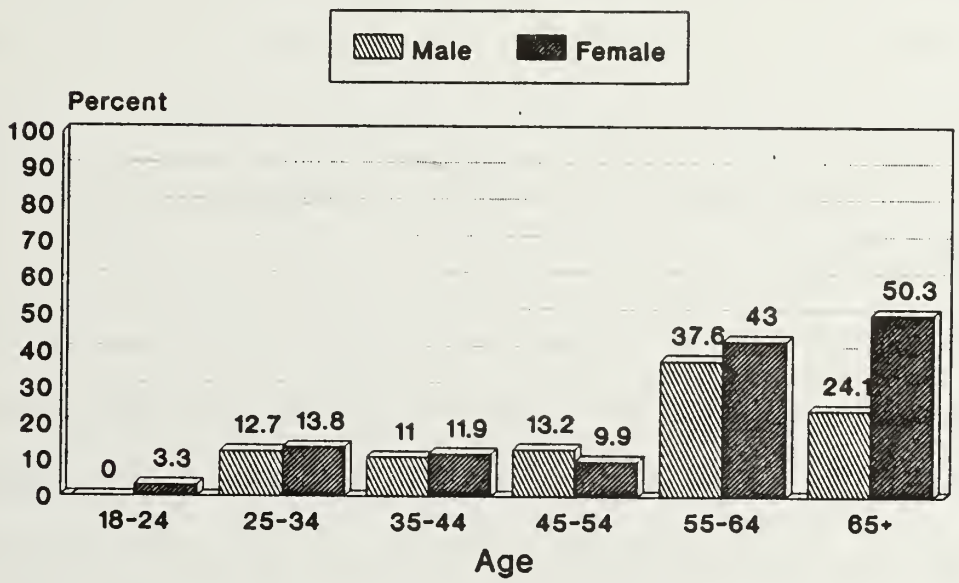
TABLE 7

MONTANANS AT RISK FROM HYPERTENSION

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	0	0.0%	2	3.3%	2	1.7%
25 to 34 Years	14	12.7%	15	13.8%	29	13.2%
35 to 44 Years	14	11.0%	16	11.9%	30	11.4%
45 to 54 Years	10	13.2%	10	9.9%	20	11.6%
55 to 64 Years	19	37.6%	37	43.0%	56	40.4%
65+ Years	26	24.1%	86	50.3%	112	38.9%
Total	83	15.1%	166	21.8%	249	18.5%

Note: Percents are based on weighted data.

Survey Analysis
Graphic Presentation



Hypertension

percent of adult females were at risk from high blood pressure, while in 1990 both groups were nearly identical at 18 and 19 percent, respectively.

Year 2000 Nationwide Health Objectives

The year 2000 health objective of the U.S. Department of Health and Human Services is to increase to at least 50 percent the proportion of people with high blood pressure whose blood pressure is under control. Data to measure this objective were not collected by the 1991 BRFSS survey.

OVERWEIGHT

Overview

Overweight persons are at increased risk from heart disease, cancer, diabetes, digestive diseases, and cardiovascular disease. The risk of these diseases increases as the person's weight increases. The primary factors influencing obesity are heredity, caloric intake, metabolic rate, and exercise. Although hereditary predisposition to obesity and low metabolic rate cannot be influenced by behavior, overeating and under-activity can be modified to prevent or reduce risk of being overweight.

Two common methods used to estimate obesity are relative weight and body mass index (BMI). Relative weight is equal to actual body weight divided by desirable weight for an individual with a medium frame; BMI is body weight in kilograms divided

by height in meters squared. Because BMI is considered by experts to be a more precise measurement of obesity, it was used as the measure in this study.

Overweight in Montana

Twenty-one percent of Montanans were estimated to be overweight in 1991 based on BMI. The self-reported weights indicate that 20 percent of females and 21 percent of males were overweight (Table 8). While older Montanans tended to be overweight more than their younger cohorts, no significant correlation was observed between being overweight and income levels or education.

Comparison with 1990 Survey Results

In 1990, 20 percent of Montanans were overweight based on BMI, about the same as the 1991 figure of 21 percent. Notwithstanding age, there was no significant correlation between other demographic characteristics and being overweight in either 1990 or 1991.

Year 2000 Nationwide Health Objectives

The year 2000 health objective for obesity states that no more than 20 percent of persons aged 20 and older should be overweight and no more than 15 percent of adolescents aged 12 through 19 should be overweight. Although BRFSS survey data for Montana are not available in these specific age categories, it appears Montana is

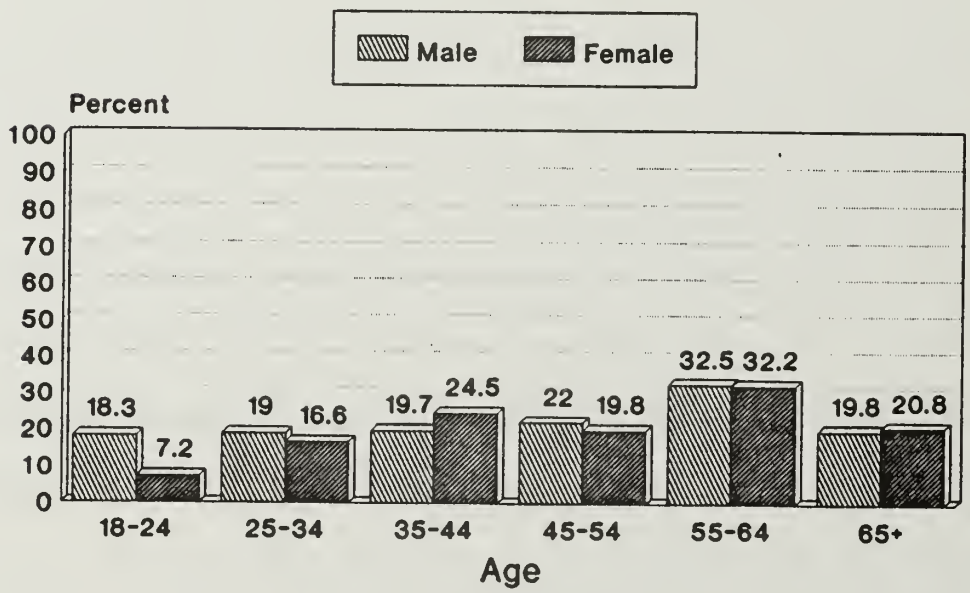
TABLE 8

MONTANANS AT RISK FROM BEING OVERWEIGHT

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	8	18.3%	3	7.2%	11	12.7%
25 to 34 Years	21	19.0%	18	16.6%	39	17.8%
35 to 44 Years	27	19.7%	36	24.5%	63	22.0%
45 to 54 Years	17	22.0%	17	19.8%	34	20.9%
55 to 64 Years	16	32.5%	30	32.2%	46	32.4%
65+ Years	22	19.8%	34	20.8%	56	20.7%
Total	111	21.2%	139	19.8%	250	20.5%

Note: Percents are based on weighted data and totals include 1 refusal.

Survey Analysis
Graphic Presentation



Overweight

very close to the year 2000 objective for incidence of overweight in the adult population.

ALCOHOL ABUSE

Overview

Excessive alcohol consumption contributes to cirrhosis of the liver, motor vehicle and other accidents, suicides, homicides, and some types of cancer. Furthermore, alcohol intake during pregnancy has been found to cause birth defects in 1,400 to 2,000 babies annually in the United States (U.S. Department of Health and Human Services, Public Health Service, September 1990).

Traffic accidents involving drinking historically have been and continue to be a major problem in Montana. Montana previously ranked as one of the highest nationally in fatality crashes involving alcohol per capita, but now ranks below the national average. Changes in the DUI law, agencies working more closely with judges, and educating Montana school children about the effects of drinking have all contributed to a significant decrease (63 percent in 1983 to 47 percent in 1989) in alcohol-related vehicle fatalities (Montana Department of Justice, Highway Traffic Safety Division, no date).

Alcohol Abuse in Montana

Table 9 presents data on Montanans who have driven at least one time during the past month after having had too much to drink. Approximately 4 percent of Montanans fall into this category (7 percent of males and 1 percent of females). Individuals in the 18 to 24 age category were more at-risk from drinking and driving than those in other age categories.

Approximately 20 percent of Montanans were classified as at risk from acute drinking (consuming five or more drinks on one occasion one or more times in the past month). Males were more than twice as likely to be at risk from acute drinking than females (Table 10).

Comparison with 1990 Survey Results

The rate of Montanans at risk for drinking and driving and acute drinking was nearly the same as in 1990. Males were at considerably higher risk than females in both years.

Year 2000 Nationwide Health Objectives

The U.S. Public Health Service year 2000 health objectives do not include a target for alcohol consumption as defined by 1990 BRFSS.

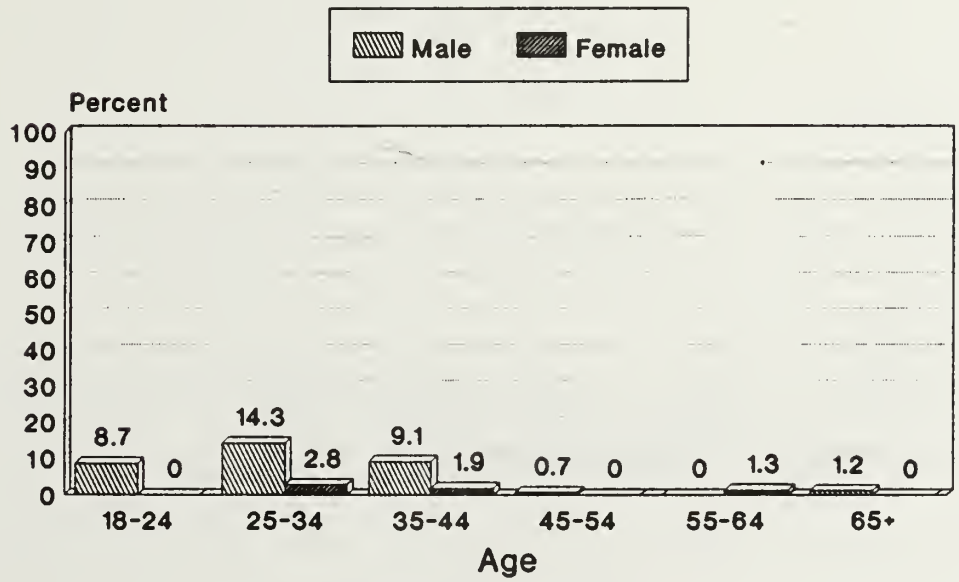
TABLE 9

MONTANANS AT RISK FROM DRINKING AND DRIVING

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	4	8.7%	0	0.0%	4	4.3%
25 to 34 Years	15	14.3%	3	2.8%	18	8.7%
35 to 44 Years	12	9.1%	3	1.9%	15	5.6%
45 to 54 Years	1	0.7%	0	0.0%	1	0.4%
55 to 64 Years	0	0.0%	1	1.3%	1	0.7%
65+ Years	1	1.2%	0	0.0%	1	0.5%
Total	33	7.1%	7	1.2%	40	4.1%

Note: Percents are based on weighted data.

Survey Analysis
Graphic Presentation



Drinking and Driving

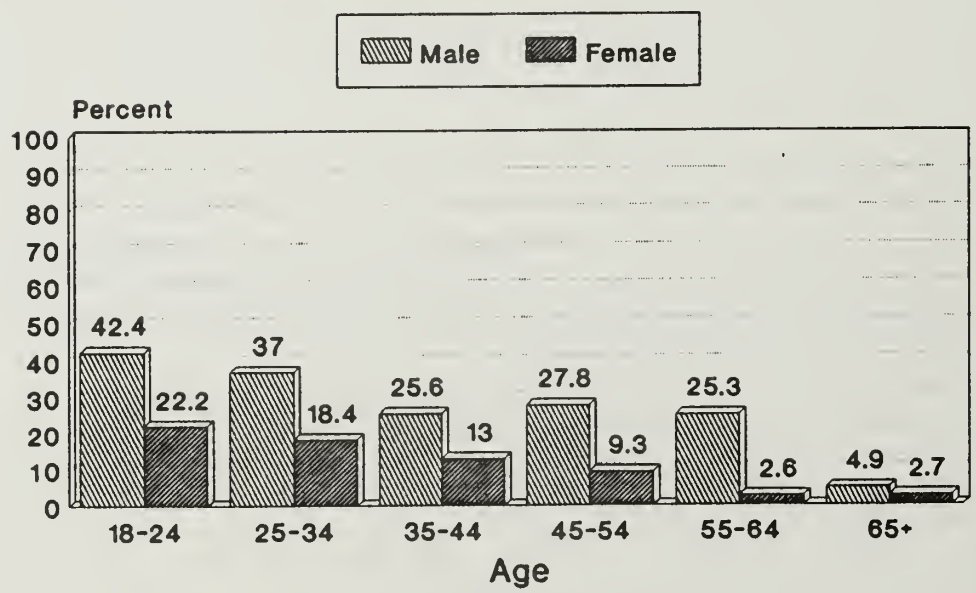
TABLE 10

MONTANANS AT RISK FROM ACUTE DRINKING

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	21	42.4%	11	22.2%	32	32.2%
25 to 34 Years	38	37.0%	23	18.4%	61	27.9%
35 to 44 Years	36	25.6%	18	13.0%	54	19.5%
45 to 54 Years	20	27.8%	8	9.3%	28	18.7%
55 to 64 Years	13	25.3%	2	2.6%	15	13.7%
65+ Years	4	4.9%	4	2.7%	8	3.7%
Total	132	27.9%	67	12.1%	199	19.9%

Note: Percents are based on weighted data and totals include 1 refusal.

Survey Analysis
Graphic Presentation



Acute Drinking

MAMMOGRAM HEALTH SCREENING

Overview

Mammography, an X-ray study of the breast, is an effective screening method to detect cancer and allows treatment at an early stage of the disease. Breast cancer is one of the leading causes of cancer death among Montana women with about 1 out of 10 women projected to develop this disease. In 1989, 31 percent of malignant cancer cases among Montana women were breast cancer (Montana Department of Health and Environmental Sciences, Vital Records and Statistics Bureau, May 1991).

Although the cause of breast cancer has not been determined, some risk factors include:

- Being older than 40 years of age.
- Family history of breast cancer or benign breast disease.
- High socioeconomic status.
- Exposure to high doses of radiation.
- Menarche beginning at an early age.
- Menopause starting at a late age.
- Birth of first child at a late age of the mother.

Mammogram Health Screening in Montana

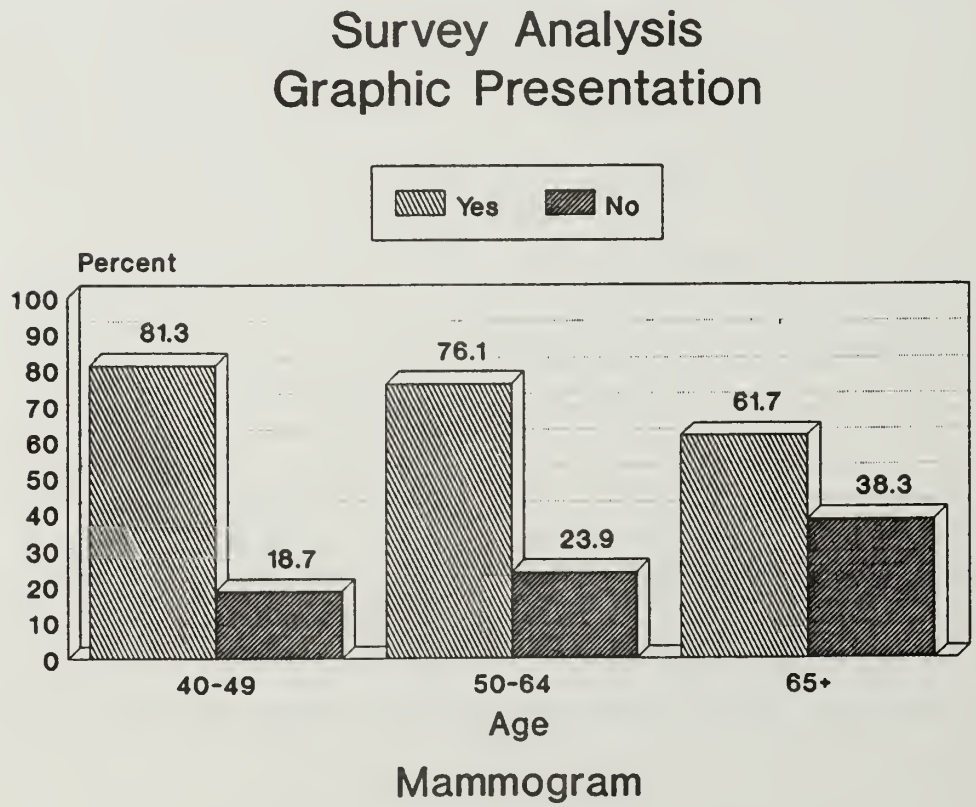
In 1991, 72 percent of female Montanans, 40 years old or older, reported they had a mammogram sometime in their lives (Table 11). Females between the ages of 40

TABLE 11

FEMALE MONTANANS AT RISK FROM LACK OF MAMMOGRAM SCREENING

Age	Yes		No		Total	
	Number	Percent	Number	Percent	Number	Percent
40 to 49 Years	91	81.3%	23	18.7%	114	100.0%
50 to 64 Years	101	76.1%	31	23.9%	132	100.0%
65+ Years	101	61.7%	70	38.3%	171	100.0%
Total	293	72.1%	124	27.9%	417	100.0%

Note: Percents are based on weighted data.



and 49 were more likely to have had a mammogram (81 percent) than those females 50 years old or older (68 percent). In addition, females with lower income levels were less likely to have had a mammogram than those with higher incomes.

Sixty-seven percent of the survey participants had a mammogram within the past year, while 7 percent had their last mammogram more than five years ago. Ninety-three percent of female Montanans indicated the reason they had their last mammogram was because it was included in a routine checkup.

Comparison with 1990 Survey Results

Comparable data between 1990 and 1991 for female Montanans who have ever had a Mammogram are not available. In 1990 all adult females were asked if they ever had a mammogram, while in 1991 the data represented only those females 40 years old and older.

Year 2000 Nationwide Health Objectives

The health objective for year 2000 is to increase to at least 80 percent the proportion of women 40 years of age and older who have ever received a clinical breast examination and mammogram. Since only 72 percent of the females 40 years old or older reported ever having a mammogram it appears that Montana needs to increase the awareness of females to having a regularly scheduled mammogram if they are to reach the year 2000 objective.

PAP SMEAR TESTS

Overview

A number of studies have found that the Pap test is an effective tool for early detection of cancer of the uterine cervix, reducing mortality from the disease by as much as 75 percent (U.S. Department of Human Services, September 1990). The decline in the number of deaths nationwide from cervical cancer from 5.8 women per 100,000 in 1970 to 2.8 in 1988 is thought by many experts to be due primarily to the use of Pap tests. In Montana, cervical cancer accounted for 11 deaths in 1990, or approximately 3.7 females per 100,000.

Pap Tests in Montana

In 1991, approximately 79 percent of all adult female Montanans had a Pap test within the past 2 years (Table 12). Females, 25 to 49 years old, were more apt to have had a Pap test than younger females (18 to 24 years old) or older females (50 years old or older). Women with higher household incomes and those with more education tended to have Pap tests more often than those with lower household incomes and less education. Nearly all (99 percent) adult women in Montana have heard of Pap tests and 95 percent have had a Pap test at some time in their life.

Comparison with 1990 Survey Results

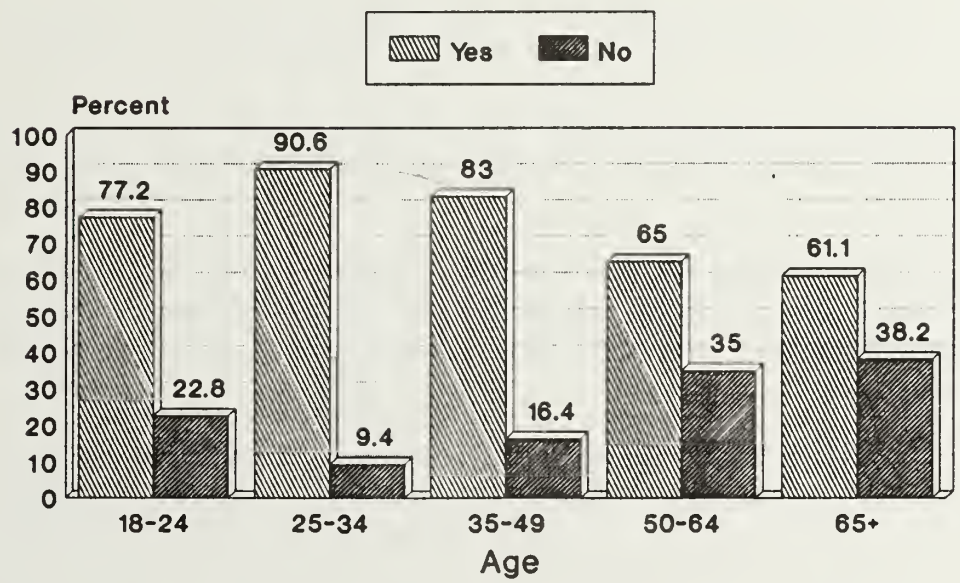
Comparable data between 1990 and 1991 for female Montanans who had a Pap test within the past two years are not available.

FEMALE MONTANANS AT RISK FROM LACK OF PAP SMEAR TEST WITHIN PAST 2 YEARS

Age	Yes		No		Total	
	Number	Percent	Number	Percent	Number	Percent
18 to 24 Years	39	77.2%	7	22.8%	46	100.0%
25 to 34 Years	111	90.6%	12	9.4%	123	100.0%
35 to 49 Years	138	83.0%	30	16.4%	169	100.0%
50 to 64 Years	53	65.0%	26	35.0%	79	100.0%
65+ Years	64	61.1%	43	38.2%	108	100.0%
Total	406	78.8%	118	20.9%	526	100.0%

Note: Percents are based on weighted data and totals include 1 refusal.

Survey Analysis
Graphic Presentation



Pap Smear Test

Year 2000 Nationwide Health Objectives

The health objective for year 2000 is to reduce deaths from cancer of the uterine cervix to no more than 1.3 deaths per 100,000 adult women. The national rate is presently at 2.8 deaths while the 1990 state rate was 3.7 deaths per 100,000 adult women. Since early detection is paramount to reducing the death rate it is important that Montana continue to educate women on the importance of Pap tests. From the data collected, this effort should be targeted at younger, lower income, and less educated women - the group that tended to lag in having Pap tests within the past two years.

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State of Montana

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